UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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OFFICE OF
ENFORCEMENT AND
COMPLIANCE ASSURANCE

William Knoll
Department of the Navy
Code NAVSEA 08U
2531 Jefferson Davis Highway
Arlington, VA 22242-5160

Dear Mr. Knoll:

In accordance with our responsibilities under Section 309 of the Clean Air Act and the National Environmental Policy Act (NEPA), the Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement for a Container System for the Management of Naval Spent Nuclear Fuel.

This EIS evaluates a range of alternate systems for the loading, storage, transport, and possibly disposal of naval spent nuclear fuel following examination at the Idaho National Engineering Laboratory (INEL). All pre-examination naval spent nuclear fuel is shipped to INEL for examination and temporary storage pending ultimate disposition outside the State of Idaho. All alternatives addressed in this EIS utilize dry storage of naval spent nuclear fuel at INEL. This EIS provides the details and results of specific evaluations of environmental effects associated with each alternative.

In general, EPA believes that dry storage is an acceptable storage method, since the spent nuclear fuel will eventually need to be transported out of INEL and the State of Idaho. In addition, dry storage technology has been assessed in other federal agency EISs. EPA has no objection to the proposed action and has rated this draft EIS LO (Lack of Objection). We have enclosed a few technical clarification comments for your consideration when preparing the final EIS.

Thank you for the opportunity to review this EIS. The staff contact for this review within the Office of Federal Activities is Ken Mittelholtz (202-564-7156).

Sincerely,

Richard E. Sanderson
Director
Office of Federal Activities

Enclosure

EPA's Technical Comments
on the Navy Draft EIS for a
Container System for the Management
of Naval Spent Nuclear Fuel

A **Page S-2, 3rd bullet** - Special Case Waste is described as containing concentrations of transuranic constituents exceeding Class C limits. Appendix E, however, describes Special Case Waste as containing no fuel and only activation products. The description of this type of waste should be clarified.

B **Page 2-6, 3rd paragraph** - It is not clear whether possible airborne emissions from fuel elements which have been cut are included in the analysis of radiological impacts under normal conditions (section 6.3.4). Evaluations for loading and unloading (Section A.2.4) only address carbon-14 releases.

C **Page B-17, 2nd paragraph** - Radiation dose decrease with distance is described using 1/x2 (inverse square law). This is also shown in equation B.1 (page B-6). On page B-16 (3rd paragraph), however, some sources are described as more properly modeled as line sources. The inverse square approximation is only appropriate where the physical dimensions of the source are small relative to the distance from the source. In the case of the dimensions on page B-6, some of the source distances from the source (e.g. 6 meters) are similar to the source dimensions. In these cases it is not clear that the inverse square approximation is appropriate.

Commenter: Richard E. Sanderson - U. S. Environmental Protection Agency, Washington, D.C.

Response to Comment:

A. The commenter requested a clarification of the description of special case waste, noting an inconsistency in the descriptions provided in the Executive Summary and in Appendix E.

Appendix E correctly states in Section E.1 that the upper and lower non-fuel bearing structures (including those portions which are classified as special case waste), which are removed during the preparation of naval fuel assemblies, do not contain transuranic elements. The fourth bullet on page S-2 of the Executive Summary has been revised to correct the description of this special case waste, associated only with naval spent nuclear fuel, as having concentrations of certain short- and long-lived isotopes which are greater than those specified for Class C in 10 CFR Part 61.55.

B. No fission product releases are expected at the repository from spent fuel elements which have been destructively examined. Chapter 2, Section 2.5 of the EIS states that prior to placing this fuel in a dry storage container, it would be repackaged in canisters of highly corrosion resistant metal. Therefore, this sealed package would not result in an airborne release during unloading operations.

C. Large radiation sources act like plane sources of exposure to individuals very close to the source. A large radiation source acts like a line source of exposure and then like a point source of exposure as distance from it increases.

In general, the decrease in radiation exposure is inversely proportional to the distance from the source or 1/radius(r) fall-off applies to the locations extending from points very close to the container to those at a distance equal to half the height of the line source. Beyond that distance a line source behaves like a point source and the decrease in radiation exposure is inversely proportional to the square distance from the source or $1/r^2$ fall-off applies. Table B.5 of the EIS shows the effective package dimensions for the alternative shipping containers. A $1/r^2$ fall-off is appropriate even for the largest package since 2.4 meters (half the height of 4.8 meters) is less than 8.4 meters (6.0 meters, which is the radial distance to the container for the person stuck in traffic, plus 2.4 meters, which is the distance from the center of the source inside the container to the outside surface of the container.)